

LIMITED-ANGLE FREQUENCY-DISTANCE RESOLUTION RECOVERY IN NUCLEAR MEDICINE IMAGING

Abstract of the Disclosure

A nuclear camera (10) includes a plurality of
5 detector heads (12) which have collimators (14) for fixing
the trajectory along which radiation is receivable. A
rotating gantry (22) rotates the detector heads around the
subject collecting less than 360° of data, e.g., 204° of
data. A zero-filling processor (50) generates zero-filled
10 projection views such that the actually collected
projection views and the zero-filled projection views span
360°. A smoothing processor (56) smooths an interface
between the zero-filled and actually collected projection
views. The zero-filled and smoothed views are Fourier
15 transformed (60) into frequency space, filtered with a
stationary deconvolution function (62), and Fourier
transformed (64) back into real space. The resolution
recovered projection data sets in real space are
reconstructed by a reconstruction processor (68) into a
20 three-dimensional image representation for storage in an
image memory (70).